Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

Draft Construction/Operting Permit No. V-05-035
ALCAN PACKAGING
6700 MIDLAND INDUSTRIAL DRIVE, SHELBYVILLE, KY
October 12, 2005
ELAHE HOUSHMAND, REVIEWER
Plant I.D. # 21-211-00031
Application Log # G439
A.I. # : 3950
Activity # : APE20040002

SOURCE DESCRIPTION:
Alcan Packaging manufactures printed and laminated products. Flexible food (such as wrappers, lids, or pouches) and pharmaceutical packages constitute most of Alcan Packaging's product. The products are manufactured using rotogravure, flexography, hot melt adhesive, and other paper, film, or foil coating equipment (printing and coating machines).

Alcan Packaging has submitted a Title V permit application. Currently the facility operates under the authority of the following two permits:

1. F-99-006, issued in August 5,1999.
   Emission Points: Clean-Up Operation, Mix Room, Parts Washer,
   P1, P3 - P5, L1 - L4 VOC Allowable ≤ 230 tons per year

2. F-99-016 (Revision 1), Issued in August 13, 1999.
   Emission Points: Clean-Up Operation
   P7- P10, L5- L9 VOC Allowable ≤ 230 tons per year

During the Title V review, the source was granted a source specific SIP revision. The SIP revision allowed the facility to show compliance with 401 KAR 59:212 regulation based on 30-day average. See the July 10, 2003 Federal Register for details.

Title V permit, V-05-035, authorizes construction of laminator L10 in place of printer P8 that was authorized by F-99-016 permit. It also authorizes operation of:

EP01 B1, B2, B3 and B4 –Boilers
EP02 Storage and Mixing Areas
EP03 Off-Line Parts Cleaning
EP04 Extruder Support Facilities
EP05 B5 and B6 – Heat Exchangers
P1, P3, P4, P5, L1, L2*, L3 & L4
P7, P9, P10, L5, L6, L7, L8, L9, L10

*Note: Laminator L2 will be removed prior to installation of Laminator L6 to provide adequate oxidizer capacity on Oxidizer # 5 for Laminator L6.

COMMENTS:

Type of control and efficiency

If pollution prevention is practiced on raw material mixing and storage, there is very little material loss prior to utilization or disposal.

Six (6) regenerative thermal oxidizers (RTOs) and two (2) recuperative catalytic oxidizers are used to control VOC and HAP emissions from many of the printers, coaters, and laminators at the source. Control efficiency is determined through testing.

Cyclones and filters on the resin silos control particulate emissions during loading. The control devices have been assumed to have 90% control efficiency.

Emission factors and their source

With best management practices maintained emission factor for raw material mixing and storage tested to be 0.2% (worst case) of the VOC gallons throughput. However, if practices change, significantly greater emissions could result and actual data could be required to demonstrate compliance. Therefore, the source is essentially required to maintain best management practices.

All organic emissions from hot melt adhesive extrusion have been assumed to be particulate matter. The resins and other materials used in the adhesive are solids at ambient temperatures. Therefore, the organic vapors generated in the process will not remain vapors. Additionally, the vapor generation rate appears to be negligible based on an engineering evaluation by the Division.

Emissions from loading of the resin silos have been estimated based on the emission factors for concrete and cement weigh hoppers developed by the Midwest Research Institute. PM emissions are estimated at 0.02 lb/ton processed and PM_{10} emissions are estimated at 0.01 lb/ton processed. With properly operated and maintained cyclones and filters, these emissions will be negligible.

Other portions of the hot melt extrusion system are not vented to the atmosphere and as a result, emissions from the units have been assumed to be negligible.

Ovens, boilers, water heaters, heat exchangers, and lab burners use natural gas. Emissions are calculated using AP-42, emission factors for natural gas combustion in small boilers.

Emissions from the 2 wet and dry grinders for repair of rubber on printing cylinders will equal the change in mass of each cylinder. Since the units have been certified as insignificant activities, an emission factor has not been determined. Based on an engineering evaluation by the Division, the units are believed to be insignificant activities.

Trimming and bailing have been observed to have negligible particulate emissions.

All VOCs and organic HAPs used during printing, coating, and laminating are assumed to be emitted.

All VOCs and organic HAPs consumed during cleaning are assumed to be emitted.

Applicable regulations

Regulation 401 KAR 59:010, New process operations, applies since the affected facilities commenced after July 2, 1975. The regulation applies to trimming, bailing, grinding, extrusion, and supporting facilities for extrusion.

EP01 and EP05 are subject to 401 KAR 59:015, New indirect heat exchangers, because each indirect heat exchanger has a heat input capacity greater than one million BTU/hr and each commenced after August 9, 1972. Boilers in EP01 are not subject to 40 CFR 60 Subpart Dc, Standards of performance for small industrial-commercial-institutional steam generating units, because the heat input capacity of each is less than ten million BTU/hr. Heat exchangers in EP05 are subject to 40 CFR 60 Subpart Dc because the heat input capacity of each is at least ten million BTU/hr.

The parts washers used as part of press, coater, and laminator cleaning are not subject to 401 KAR 59:185, New solvent metal cleaning equipment. This determination has been made based on the design of the parts washers and on the content of page 2-4 of the CTG source document that is the basis for 401 KAR 59:185 (EPA-450/2-77-022 Control of Volatile Organic Emissions from Solvent Metal Cleaning). The parts washers used at Alcan Packaging do not fit the description of a cold cleaner or any other solvent metal cleaning equipment. The parts washers have some characteristics of cold cleaners but cold cleaners have a tank of solvent with a work surface or basket suspended over the solvent. The parts washers at Alcan Packaging clearly do not fit the cold cleaner definition.

Regulation 401 KAR 59:212. New graphic arts facilities using rotogravure and flexography, applies to each printer, coater, or laminator at the source (except L8 and L9) since the units are capable of performing packaging rotogravure or flexography printing, the units were constructed after February 4, 1981 and the units are part of a major source located in a county designated as attainment.

Regulation 401 KAR 59:210. New fabric, vinyl and paper surface coating operations, does not apply to laminators L1 - L7 and L10. Because these laminators are capable of printing, 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography, is the potentially applicable regulation. Confirmation can be found in 401 KAR 59:212 Section 1(4)(j) and pages 1-4 and 5 of the CTG source document that is the basis behind 401 KAR 59:212 (EPA-450/2-78-033 Control of Volatile Organic Emissions from Existing Stationary Sources - VIII: Graphic Arts - Rotogravure and Flexography).

Regulation 401 KAR 59:210, New fabric, vinyl and paper surface coating operations, is potentially applicable to laminators L8 and L9 that are only capable of coating. Because the total VOC potential emission from L8 and L9 is 7.68 tons per year (below 10 tons per year), L8 and L9 are exempt per Section 6(3)(c) from 401 KAR 59:210.

The source is subject to 401 KAR 63:002, 40 CFR Part 63 national emission standards for hazardous air pollutants, since 40 CFR 63 Subpart KK, National Emission Standards for the Printing and Publishing Industry, applies. 40 CFR 63 Subpart KK applies because the source is major for HAPs and packaging rotogravure and flexography presses are operated at the source. The laminators have opted into 40 CFR 63 Subpart KK since they can. Control equipment and same substrates allow the laminators to opt in. Units L8 and L9 utilize a substrate from one of the printers (primarily P1). Consequently, 40 CFR 63 Subpart JJJJ, National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating, does not apply.

Regulation 40 CFR 63 Subpart A, General Provisions applies as a result of regulation 40 CFR 63 Subpart KK applicability.

The Division had previously made a determination that a case- by-case MACT for Paper and Other Web Coating was required. Upon further research and review, the Division has determined that the affected equipments may opt into Subpart KK. This regulation was in affect when previous case-by-case MACT determination was permitted. Therefore, the Division is rescinding its previous determination and correcting its past determination with this Title V permit.

Regulation 401 KAR 51:017, Prevention of significant deterioration of air quality, applies to major sources or major modifications located in an attainment area and commenced after September 22, 1982. Since the source has taken synthetic minor limits, the source has never triggered this regulation.

Regulation 40 CFR 64, Compliance assurance monitoring, will apply at renewal to VOC emissions subject to 401 KAR 59:212.

PERIODIC MONITORING:
Given the design and control efficiency on the 2 wet and dry grinders for repair of rubber on printing cylinders, the need for monitoring is minimal. No mass or opacity problems should be observed if the devices are maintained properly.

Given the design and utilization of natural gas, the combustion units at the source require no monitoring. Emissions from natural gas combustion will always comply with applicable limitations when the devices are maintained and operated properly.

Trimming and bailing systems are not likely sources of airborne particulate matter. Most waste will be so large that it falls almost immediately to the ground. As a result, no monitoring is required for any of the trimming or bailing systems.

Hot melt adhesive and coating applicators will not require any monitoring because the vapor generation rate appears to be negligible. As long as the applicators are operated and maintained consistent with manufacturer recommendations the applicators will comply with mass and opacity limits that apply.

Support facilities for the hot melt extruders are not likely to cause mass or opacity problems either. A combination of filters, cyclones, and process design will assure compliance when the equipment is working properly. Therefore, monitoring to verify proper operation will normally demonstrate compliance. Testing may be performed if a problem is suspected but given the nature of the processes and the opacities observed at the source, the Division believes that routine (monthly) inspections and daily proper operation are good indicators of compliance. Inspections will identify the majority of problems. Other problems may identify themselves through process or worker comfort needs. Equipment reliability and pronounced process problems make routine inspections the appropriate monitoring tool for demonstrating compliance with mass and opacity limits.

VOC control efficiencies of control devices at the source were or will be determined and verified as described in 40 CFR 63 Subpart KK. The permit contains the monitoring requirements prescribed in 40 CFR 63 Subpart KK.

VOC capture efficiencies of capture systems at the source were or will be initially determined through testing. Continuous monitoring and record keeping are used to demonstrate capture

efficiency in the source's building enclosures. Interlocks and periodic interlock checks are used with all other capture systems. The parameters identified have been determined to be the best surrogates of the initial demonstrated capture efficiency. These measures have been determined to be at least as stringent as the minimum requirements described in 40 CFR 63 Subpart KK.

EMISSION AND OPERATING CAPS DESCRIPTION:
The source has precluded PSD applicability by accepting synthetic minor limits on printing/coating/laminating equipment constructed at the source prior to August 1999 and by accepting synthetic minor limits on printing/coating/laminating equipment constructed at the source after August 1999. By taking the prior to August 1999 limits, the source remained minor for PSD up to that date. By taking the after August 1999 limits, the modification to the source is minor under PSD. However, Alcan Packaging is now defined as a major PSD source and future construction projects (beyond those already described in the Title V permit) at the source will subject the source to PSD. The accepted synthetic minor limits are as follows:

1. For any 12 consecutive month period, raw materials and control devices used at **Constructions Prior to August 1999** shall be such that VOC emitted from the group (including mixing, storage, and clean-up activities) is ≤ 230 tons per year (demonstrated monthly).

   Where the Constructions are: EP01, P1, P3, P4, P5, L1, L2, L3, and L4

2. For any 12 consecutive month period, raw materials and control devices used at **Constructions After August 1999** shall be such that VOC emitted from the group (including mixing, storage, and clean-up activities) is ≤ 230 tons per year (demonstrated monthly).

   Where the Constructions are: EP05, P7, P9, P10, L5, L6, L7, L8, L9, and L10

Limits resulting from applicability of 401 KAR 59:212 apply to each line and include emissions from mixing, storage, and cleaning. Compliance is not to be daily as indicated in the regulation due to Division and EPA approval of 30-day emission limits. These limits are different than the 40 CFR 63 Subpart KK limit that applies to the source.

CREDIBLE EVIDENCE:
This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.